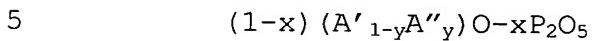


WHAT IS CLAIMED IS:

1. A phosphate-based ceramic composition with a low dielectric constant, represented by the following formula:



wherein A' and A'' are each independently Ca, Ba, Sr, Zn, Mg, Ni, Mn or Cu, and x and y are numbers satisfying the following conditions: $0 < x < 1$ and $0 \leq y \leq 1$.

10 2. The phosphate-based ceramic composition according to claim 1, further comprising 0.01~5 parts by weight of at least one sintering assistant selected from the group consisting of CuO, B₂O₃ and Bi₂O₃, based on 100 parts by weight of the composition.

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3. A method for manufacturing a dielectric substrate using a phosphate-based ceramic composition with a low dielectric constant, comprising the steps of:

20 (a) preparing a composition represented by $(1-x)(A'_{1-y}A''_y)O-xP_2O_5$ wherein A' and A'' are each independently Ca, Ba, Sr, Zn, Mg, Ni, Mn or Cu, and x and y are numbers satisfying the following conditions: $0 < x < 1$ and $0 \leq y \leq 1$;

 (b) laminating at least two thin layers consisting of the composition prepared in (a) to produce a laminate; and

25 (c) sintering the laminate.

4. The method for manufacturing a dielectric substrate using a phosphate-based ceramic composition with a low dielectric constant according to claim 3, wherein the step (b) includes the sub-steps of:

molding the composition into a tape;
laminating the tape into at least two layers to produce a tape laminate; and
sintering the tape laminate.

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5. The method for manufacturing a dielectric substrate using a phosphate-based ceramic composition with a low dielectric constant according to claim 3, wherein the step (b) includes the sub-steps of:

15 forming the composition into a paste;
laminate-printing the paste twice or more to produce a laminate; and
sintering the laminate.

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6. The method for manufacturing a dielectric substrate using a phosphate-based ceramic composition with a low dielectric constant according to claim 4, further comprising the step of forming an internal electrode between layers of each laminate.

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7. The method for manufacturing a dielectric substrate
using a phosphate-based ceramic composition with a low
dielectric constant according to claim 5, further comprising
the step of forming an internal electrode between layers of
5 each laminate.

8. The method for manufacturing a dielectric substrate
using a phosphate-based ceramic composition with a low
dielectric constant according to claim 3, wherein the $(A'_{1-y}A''_y)O$ is at least one oxide selected from BaO, SrO, CaO, ZnO,
10 MgO, NiO, CuO and MnO.

9. The method for manufacturing a dielectric substrate
using a phosphate-based ceramic composition with a low
15 dielectric constant according to claim 3, wherein the
composition further comprises a sintering assistant.

10. The method for manufacturing a dielectric substrate
using a phosphate-based ceramic composition with a low
20 dielectric constant according to claim 9, the sintering
assistant is at least one compound selected from B_2O_3 , CuO and
 Bi_2O_3 .

11. The method for manufacturing a dielectric substrate
25 using a phosphate-based ceramic composition with a low

dielectric constant according to claim 3, wherein the composition further comprises 0.01~5 parts by weight of at least one sintering assistant selected from B_2O_3 , CuO and Bi_2O_3 , based on 100 parts by weight of the composition.

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